EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS, VOL. 26, 497–498 (1997)

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Professor Rodriguez emphasizes a parameters I_D in his discussion, which was proposed as a damage parameter in his previous paper.[1] This parameter has not been employed as a variable in the discussed paper,[2] but shortly mentioned as a modification to another damage parameter N described for inelastic SDOF systems.[3] With this modification, I_D has been adopted to generalized co-ordinate SDOF systems, called equivalent SDOF systems in the referred paper.[1] The obvious conceptual similarity between them can be observed from the analytical definitions of these two parameters:

$$N = \frac{E_H}{m\omega_n^2 U_y(\mu - 1)} \tag{1}$$

$$I_D = \frac{E_H^*}{E_\lambda^*} \tag{2}$$

The parameter N (erroneously referred as equation (7) in the paper[2] although its equation number is 8) describes a ratio of the total dissipated hysteretic energy to the energy absorption capacity of an SDOF system. Similarly, the parameter I_D describes a ratio of the total dissipated hysteretic energy to the energy absorbed during a complete cycle by an equivalent SDOF system displaced to an 'acceptable' amplitude.

Although the subject of discussion is the authors' paper and not Professor Rodriguez's paper, it is appropriate to clarify certain points indicated in the discussion. The parameter γ expressed in equation (1) in Professor Rodriguez's discussion is simply the earthquake excitation factor of a generalized co-ordinate SDOF system, normalized with respect to its generalized mass in structural dynamics language.[4] Modelling a multistorey building as a generalized co-ordinate SDOF system with a single constant displacement shape,[1] and calling the generalized co-ordinate δ as the roof displacement does not result in a superiority of I_D over N since both of them are described for SDOF systems.

The objective of the discussed paper[2] is to identify the ground motion parameters which are effective on the ground motion damage potential. It is important to differentiate between the damage potential of ground motions and the damage they cause. The damage potential is filtered through the inelastic properties of a structural system to cause damage, which may then be quantified by a damage parameter or a damage index. Hence, it is inconsistent to compare the index E_I proposed for measuring the damage potential of a ground motion in our paper[2] and the damage parameter I_D proposed by Professor Rodriguez in his paper[1] to measure the spectral distribution of damage for equivalent SDOF inelastic systems.

Finally, the strong correlation between E_I and the Housner intensity I_H indicated in the discussion is only valid for short and impulsive ground motions as clearly exhibited in Figure 14. It can be observed that this correlation diminishes for the 37 ground motion components with long effective durations including the Mexico City EW, Llolleo N10E and E1 Centro NS records. These three records constitute the complete ground motion data set that Professor Rodriguez used for verifying his damage parameter I_D.

In conclusion, the authors would like to express thanks to Professor Rodriguez for the interest he has shown in their work.

CCC 0098–8847/97/040497–02$17·50

Received 19 August 1996

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